

Version Control

The VPA's *Benchmark and Infrastructure Costs Guide* will be managed as a living document. The VPA will update the document annually or as appropriate.

Note that the actual benchmark cost estimates will only be indexed annually, and any major updates will occur only when clearly justified.

Where appropriate, it may be necessary to clarify issues immediately between updates. Any such clarifications will be issued as addenda via the VPA website: www.vpa.vic.gov.au.

To ensure the most up-to-date version is used, including being aware of any addenda that may be issued from time to time, it is strongly recommended that the latest version of this document be obtained via the above website before use.

Version	Issued	Comment
2019.1	15 October 2019	Initial release (VPA Board approved, 9 October 2019)

Foreword

When land is developed for urban purposes new or upgraded infrastructure is needed to support the new development and its future communities. Infrastructure contributions levied from developers help fund basic and essential infrastructure for new and growing communities, such as first carriageways of and intersections with arterial roads, community centres, kindergartens, maternal and child health facilities, local parks and sporting facilities.

In 2016 a new contributions regime, the Infrastructure Contributions Plan (ICP), was introduced to streamline the preparation of funding plans for greenfields development. An ICP is a statutory document incorporated in a planning scheme for the purposes of imposing infrastructure contributions to fund the provision of infrastructure and secure land for public purposes.

Agreeing the scope and cost of infrastructure items included in an ICP, or previously a Development Contributions Plan (DCP), often entailed lengthy disputes over what constituted basic and essential infrastructure and significant variation or irreconcilable differences between cost estimates prepared by different stakeholders. The purpose of the use of benchmark infrastructure scopes and cost estimates is therefore to better inform the ICP production process.

By calculating benchmark costs for a range of basic and essential infrastructure items, the Benchmark Costings will systematically, consistently and transparently guide the preparation of ICP designs and cost estimates. This approach is consistent with the premise of the new ICP system as outlined in the *Infrastructure Contributions Plan Guidelines*.

The VPA commissioned the Benchmark Costings Project (*Benchmark Costings Report*, Cardno, April 2019) to be used to inform and further simplify and standardise preparation of ICPs. From its first draft, this technical work was refined and improved through consultation with outer growth Councils, industry and consultants. Additional feedback was also received during recent Planning Scheme Amendments regarding how the technical information within the Benchmark Costs Report should be utilised, and this Guide is a result. The use of the Benchmark Costs was endorsed by the VPA Board on 9 October 2019.

This *Benchmark Infrastructure and Costs Guide* describes how the VPA will use the benchmark costs in preparing ICPs to assist all stakeholders to productively participate. It is intended to be a live document and will be regularly reviewed, updated and improved.

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1. Introduction

With Victoria expected to grow to 11 million people by 2056, the Victorian Planning Authority (VPA) has been tasked to prepare land use plans in Melbourne's greenfield growth areas, as well as in specific urban renewal sites and regional areas across Victoria.

These land use plans, known as Precinct Structure Plans (PSP) in Melbourne's greenfield growth areas, are intended to ensure new development provides access to affordable housing, employment and public spaces, while creating great places to live. PSPs also defines the infrastructure needed to support this future development.

A PSP is typically accompanied by an Infrastructure Contributions Plan or ICP (previously a Development Contributions Plan or DCP) that lists the necessary infrastructure identified by the PSP that is the responsibility of the Council and can attract a funding contribution from developers.

Often, resolving the scope and cost of planned infrastructure has been a contentious, expensive and time-consuming process. Benchmark infrastructure scopes and cost estimates were prepared to simplify and reduce the costs of developing an ICP. The background technical work undertaken is presented in the *Benchmark Infrastructure Report* (Cardno, 11 April 2019).

This Benchmark Infrastructure and Costs (BIC) guide is intended to resolve issues of varying opinion being presented by different stakeholders, Councils and consultants regarding the need for and scope of infrastructure and the approach to costing it. It is also intended assist moving beyond the approach to the cost rates used by consultants and expert witnesses based on proprietary cost information. The methodology adopted of collating work across multiple precincts and Councils, from cost estimates prepared by different consultants and by doing this in a consistent way in consultation with the key stakeholders is intended to more robustly and transparently inform the preparation of ICPs.

In addition, this guide is intended to assist in the identification of appropriate infrastructure to include in the ICP and to provide an appropriate approach to estimating the cost of this infrastructure. It should be read in conjunctions with the *Planning & Environment Act 1987* (the Act), *Ministerial Direction on the Preparation and Content of Infrastructure Contributions Plans* (the Direction) and the *Infrastructure Contributions Plan Guidelines* (the Guidelines).

2. Precinct Structure Plans and Infrastructure Contributions Plans

In Melbourne's greenfield growth areas, PSPs are the key tool for planning land use and infrastructure provision. They set the framework for large scale, fully serviced urban development and investment that will occur over many years. PSPs are developed taking into account the particular characteristics and requirements of each location.

Identifying the Infrastructure needed to support a new community, including transport, community and recreation facilities, forms an essential component of PSPs. This infrastructure is provided by various parties, including the developer, the State government departments and agencies as well as Councils. Importantly, some local infrastructure is critical to the early development of new communities. This critical local infrastructure that is the responsibility of the Council is known as "basic and essential" local infrastructure. The aim is to ensure that this is delivered in a timely manner during the growth of the community and it is therefore largely funded through developer contributions.

ICPs set out how developers will contribute to the funding of this basic and essential local infrastructure. The infrastructure contribution levy is made up of the standard levy, a supplementary levy, or a combination of both. The standard levy is a fixed per net developable hectare monetary levy and is used to fund basic and essential infrastructure. The amount of levy paid is dependent on the class of development and is set by the *Ministerial Direction on the Preparation and Content of Infrastructure Contributions Plans* (Ministerial Direction).

The overall standard levy must not exceed the amount identified in the Ministerial Direction. In addition to this, the amount of the total standard levy rate for residential development that may be used for community and recreation construction must not normally exceed the capped amount set in the Ministerial Direction. Any of the standard capped levy that is not used for the community and recreation construction may be applied to transport infrastructure construction.

In accordance with specific criteria set out in the Ministerial Direction, a supplementary levy, over and above the standard levy, may also be charged to provide extra funding for specific transport infrastructure projects that cannot be funded through a standard levy.

While the Ministerial Direction contemplates cost estimates for each allowable item in order to inform a whether or not a standard levy ICP will apply, it requires cost estimates for allowable items in a supplementary ICP. The cost estimates are used to determine whether special infrastructure can be accommodated within the standard levy or if a supplementary levy is justified. Figure 1 shows how the various regulatory and guidance documents relate.

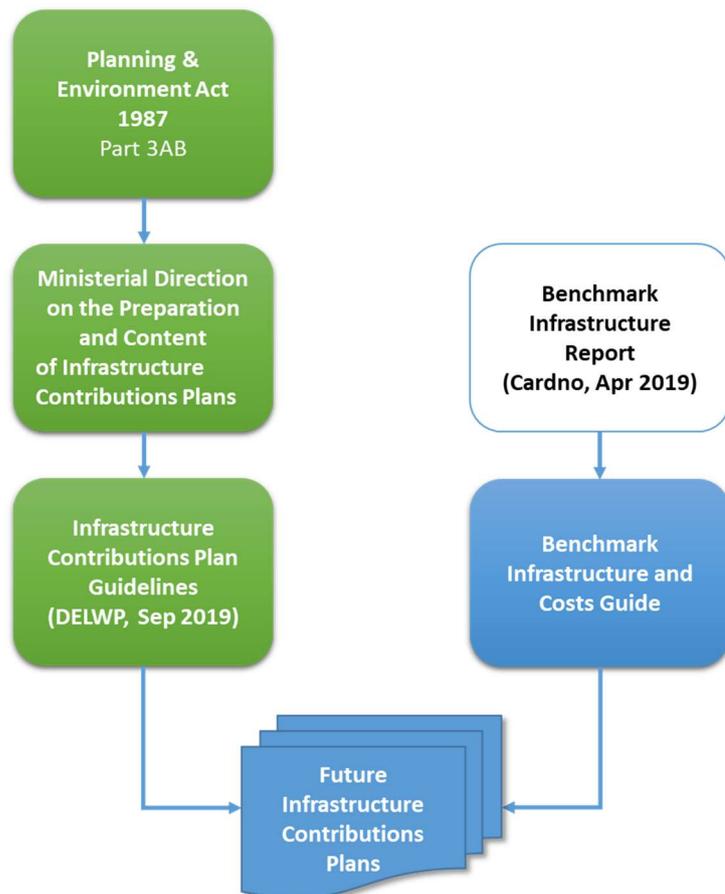


Figure 1: ICP Regulation & Guidance

Note that any infrastructure cost estimates prepared for an ICP will always be based on preliminary functional designs and estimates of cost for various component items at the time the ICP is prepared. The final designs and actual costs will not be known until the works are finally constructed, often many years after the estimates are prepared. In the intervening period other nearby infrastructure may have been provided, detailed designs will have been prepared (possibly using changed standards) and the final cost influenced by changes in material and labour costs and market conditions. It is not possible to address these potential changes at the time the ICP is prepared, although the inclusion of review, contingency and indexation provisions will allow reasonable adjustments to be made over time if required.

3. The Role of Scope and Cost Estimates in ICPs

The approach to funding infrastructure through past Development Contributions Plans (DCP) has required quite detailed and individual scope descriptions and bespoke estimates to be developed for each infrastructure item in each PSP/DCP area. This:

- added significant time, cost and uncertainty (avoiding this was a key reason to move to the ICP model)
- often involved lengthy disputes regarding the appropriate infrastructure scope and costs
- often still resulted in similar functionality, scope and costs estimates across different DCPs.

Key areas of dispute in developing scope and cost estimates are typically:

- the differing views held by stakeholders on the appropriate quality of infrastructure considered "basic and essential"; and
- differing, often irreconcilable, advice provided by expert consultants on appropriate cost rates that should be used to prepare estimates, typically based on proprietary and non-transparent cost data.

Difficulty in resolving what is "basic and essential" infrastructure and agreeing the costs has often led to uncertainty for all parties and significant disputation through the PSP & DCP review process. A key objective of the Benchmark Cost Project was to avoid these disputes wherever possible.

By calculating benchmark costs for a range of 'basic and essential' infrastructure items, the BIC aims to systematically, consistently and transparently guide ICP cost estimation. This is intended to reduce the administrative burden of preparing an ICP and increase consistency and transparency of the ICP process for all stakeholders involved.

In recognition of the similar outcomes achieved through individual scope and estimate development across DCPs, BIC has been developed so that in most cases the effort, time and cost required to develop an ICP would be reduced and better reflect the intent of the ICP system to simplify the contributions process. Thus, BIC seeks to document consistent basic and essential infrastructure scopes and to use previous cost data provided by a range of consultants to provide a more transparent set of benchmark estimates and cost rates for common use.

There will still be circumstances where a benchmark scope and/or cost is not appropriate, requiring a bespoke solution. The approach in these circumstances is discussed later.

4. Development of BIC

BIC builds on the Benchmark Costs Project. The experienced engineering consultants Cardno were engaged to undertake the technical work.

The Benchmark Costs Project collaboratively developed:

- template functional layout plans for a range of benchmark basic and essential infrastructure items providing the interim and ultimate layout as appropriate (noting that the ICP is generally intended to fund interim infrastructure)
- an itemised cost estimate for each of the functional layout plans
- verified rates for use in bespoke costing of non-benchmark infrastructure elements.

As noted earlier, the consultative approach taken to do this aimed to bring together different views to provide more robust and equitable guidance on infrastructure scoping and costs instead of developing bespoke solutions for each ICP based on organisational preferences and inconsistent and proprietary costing advice provided by various consultants.

The infrastructure categories investigated were:

- Roads and intersections
- Bridges and Culverts
- Community Facilities
- Sport & Rec Facilities
- Sports Pavilions

Fundamentally, the project involved the following tasks:

1. Review past DCP cost estimates to develop a robust view on construction rates
2. Review past infrastructure scopes and develop up-to-date, basic and essential project scopes
3. Combine the rates and scopes to develop benchmark cost estimates.
4. Develop benchmark rates for costing non-benchmark infrastructure
5. Exploring geographic variances and limitations to the benchmarks

These are fully described in *Benchmark Infrastructure Report* and summarised below:

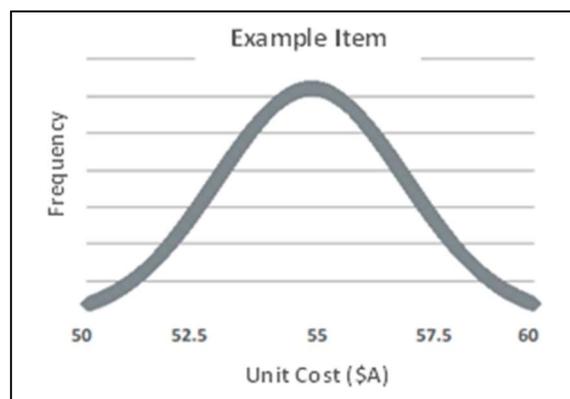
Review past DCP cost estimates to develop robust unit rates

A key element of Cardno’s work was to review cost estimates developed for 21 past DCPs. These had mostly been tested through the exhibition and review process as part of finalising each DCP.

By analysing cost estimates from a wide range of sources, Cardno were able to bring together rates provided by a range of consultants, over a number of years (indexed to a common 1 July 2018 cost base) and across the various growth areas to deliver a robust view of the range of costs that might be expected.

The approach of working with DCP cost estimates was adopted due to the difficulty in obtaining consistent and relevant as-built rates, principally because cost rates provided through tender processes are commercially confidential. Where actual costs were available, in many cases the breakdown of items did not allow direct comparison with the rates used in DCP estimates or the scope was unclear or fundamentally different (e.g. a multi-storey community centre). Some actual cost rates provided by stakeholders were compatible with the adopted approach, and these were included in the rate database. For a detailed review of the consultation feedback, please see *Stakeholder Comments Review - Benchmark Infrastructure Costings Project* (Cardno, 2018).

This process provided a database of unit rates for the various infrastructure components that could then be analysed to provide a probabilistic view of unit rates (e.g. most likely, spread) for use in developing benchmark infrastructure cost estimates.



These rates assume normal contractor provision. Delivery items such as supervision fees, traffic control, design and environmental management are estimated separately.

Land is not included. Other non-benchmark items are also not included, such as significant utility relocation, significant rock excavations and drilling, flora/fauna permits and contamination. Nor do the rates take account of savings that may be achievable should the infrastructure eventually be delivered through developer works in kind using contractors already on-site.

Review past infrastructure scopes and develop up-to-date, basic and essential project scopes

Through over sixty metropolitan greenfield PSPs prepared by the GAA / MPA / VPA, the evolution of infrastructure scopes that are considered “basic and essential” have been refined and often tested through Planning Panels.

These past scopes were reviewed and refined and a suite of 43 benchmark infrastructure scope descriptions covering typical roads and intersections, bridges and culverts, community facilities, sport fields and pavilions have been developed. Where appropriate these addressed design standards and guidelines (e.g. Austroads or Australian Children’s Education & Care Quality Authority guidance) and were adjusted to address feedback from the consultation. Again, *Stakeholder Comments Review - Benchmark Infrastructure Costings Project* outlines the feedback received through consultation and the changes included in the final scopes.

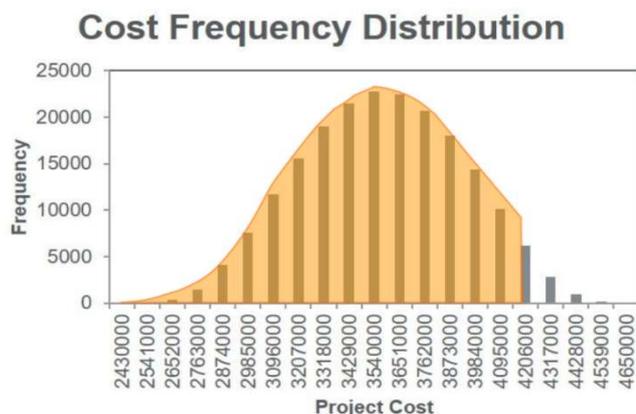
Issues related to the development of the benchmark scopes for each infrastructure category are discussed in more detail in the Appendices, which also provide the detailed scopes and estimates as follows:

- Appendix 1: Roads and Intersections
- Appendix 2: Bridges and Culverts
- Appendix 3: Community Infrastructure
- Appendix 4: Sports Pavilions
- Appendix 5: Sport and Recreation Facilities

Combining the rates and scopes to develop benchmark cost estimates.

The unit rates database and the benchmark scope quantities were then combined using a Monte-Carlo Analysis. This approach samples the possible rates multiple times to test the range of possible values to be used in developing a total project estimate. For each simulation, each item cost rate is randomly sampled based on the probability curve, multiplied by the quantity for that item and then totalled with the other component items to give one possible total cost estimate. This was repeated 200,000 times, resulting in a distribution of total costs, with most likely in the middle and less likely on the extremes (high or low).

This provides a cost curve such as the one at right, from which a cost estimate and the probability of that estimate being higher or lower than the most likely cost can be estimated.



While the most likely cost could be adopted, this would result in the estimated cost being exceeded 50% of the time (hence it is known as the P50 cost) and could readily lead to an under-funded ICP. To address this, a P90 estimate has been adopted as the benchmark local infrastructure cost estimate. Adopting the P90 value should see an estimate exceeded only 10% of the time, providing a robust basis for determining the ICP levy needed to reliably fund basic and essential infrastructure.

Developing benchmark rates for costing non-benchmark infrastructure

In some cases, there may be a need to develop an estimate for a slightly modified infrastructure scope (see Section 7). For instance, it may be appropriate to include an allowance for additional earthworks in rolling countryside. If the quantity of extra earthworks can be estimated, a simple adjustment to the estimated cost using the earthworks rate can be calculated. However, to do this an estimate of the unit rates appropriate for a P90 estimate is required. Cardno “reverse engineered” the cost estimates to develop estimates of suitable rates for each item to deliver a P90 cost estimate.

Geographic variances

The issue of potential cost differences related to geographic, topographical or other forms of variances from the source data has been raised. The review found that consultants had estimated elements across all growth areas using company specific rates with no apparent identification of site-specific challenges and features. Therefore, variances were only observed in the form of “company variances” and not based on geography.

This is also consistent with the Standard ICP transport and community infrastructure levies being identical across all greenfield growth areas.

Limitations to the benchmark costs

BIC have been prepared for use in developing new infrastructure in Melbourne’s greenfields. The use in other settings is not supported.

In addition, while the estimates prepared for the benchmark scope infrastructure are considered robust, there are situations where these will not be appropriate or will require adjustment. These include:

- where the benchmark scopes will be inappropriate and bespoke design and cost estimates will be required for special projects (e.g. long bridges, multi-storey buildings, significant earthworks)
- where the benchmark estimates will require adjustment to cope with changed quantities (e.g. an extra kindergarten room, more pavement) or specific costs for non-benchmark items within otherwise benchmark scopes (e.g. major services relocation, treating contaminated land)

The particular approaches that are appropriate in these situations are discussed later.

5. Consultation

Together with the analysis work undertaken by Cardno, the VPA engaged in stakeholder consultation to which the development industry, interface councils and the consulting industry were invited to test and refine the outcomes of the Cardno work.

Draft information was provided directly and via the VPA website to stakeholders and four workshops were held that:

- Presented the methodology
- Reviewed the findings for transport and community infrastructure (two separate workshops)
- Considered additional feedback, evidence and suggestions made

In particular, stakeholders were asked to review the benchmark scopes, the calculated rates and, if possible, to provide cost data from completed projects. The process and outcomes are reported in *Stakeholder Comments Review - Benchmark Infrastructure Costings Project* (Cardno, 2018).

Other groups such as State agencies and Planning Panels Victoria were separately briefed on the approach and draft findings and comments considered in finalising Cardno report.

The consultation led to a range of adjustments being included in the final project results, including:

- Scope adjustments (e.g. disabled car parks moved, approach earthworks included)
- Rates were reviewed for items (e.g. subgrade improvement)
- Additional line items/allowances were included (e.g. landscape maintenance, signage, car park lighting, building ESD).

Some construction cost information was provided, however much of it was not directly comparable to the greenfields examples being considered. Where the rates were comparable in scope, these were included in the cost database. Where total project scopes were considered reasonably comparable, the actual costs were mainly less than the estimates derived in this project, however many of the examples (e.g. brownfields projects) were not strictly comparable.

6. Ongoing Maintenance of BIC

BIC has been prepared to reflect current infrastructure expectations and contemporary costs. However, this BIC Guide is considered a “living” document, requiring monitoring & review. Over time it is possible that there will be significant changes in infrastructure standards or the cost environment that will require BIC to be completely updated. In the absence of such a significant change as a catalyst, the appropriateness of the current BIC will be reviewed after 5 years.

BIC will also need managing in the intervening years to account of minor adjustments in benchmark scopes and cost inflation/deflation to allow estimates used to develop an ICP to be up to date.

Should accepted standards for particular infrastructure change (for instance through policy or regulatory changes), the associated benchmark infrastructure and associated cost will be updated to reflect the revised infrastructure standard, and an addendum issued.

Infrastructure costs change continually reflecting the changing costs of materials, labour or construction methods, market conditions and competitive tension or regulation (e.g. OH&S requirements). These actual changes in real delivery costs are tracked by the Australian Bureau of Statistics, which releases quarterly Producer Price updates for Victoria. These are to be used adjust the benchmark costs to reflect changes in Producer Prices since July 2018, the common date to which the current BIC was indexed. The approach for determining the adjusted cost is outlined in Figure 2 below.

Indexation of Standard Costs

For the purposes of adjusting the Standard Local Infrastructure Cost Estimate for a calendar year other than 2018/19, the following formula should be used:

$$\text{CYACE} = \text{RYSCE} \times \text{A/B}$$

Where:

CYACE is the Current Year Adjusted Cost Estimate

RYSCE is the Reference Year Standard Cost Estimate (being for 2018/19)

A is the average of the index numbers specified for the relevant infrastructure category for the latest full year available:

- a) each of the September, December and March quarters occurring immediately before the beginning of the financial year in respect of which the rate is being indexed; and
- b) the last June quarter in the financial year one year earlier than the financial year in respect of which the standard levy rate is being indexed.

B is the average of the producer price index numbers for the relevant infrastructure category for the 2018/19 year (i.e. as at July 2018):

- a) each of the September, December and March quarters in the 2017/18 year; and
- b) the last June quarter in the 2016/17 year.

Example

In the case that the reference periods are the quarterly periods of a financial year, the variables "A" and "B" for the indexation of the standard levy rate for the financial year beginning on 1 July 2019 are as follows:

A is the average of the relevant index numbers for the June quarter in the financial year beginning on 1 July 2018 and the September, December and March quarters in the financial year beginning on 1 July 2017;

B is the average of the relevant index numbers for the June quarter in the financial year beginning on 1 July 2017 and the September, December and March quarters in the financial year beginning on 1 July 2016.

From ABS 6427.0 - *Producer Price Indexes, Australia, Jun 2019 (Series A2333706A) Road and Bridge Construction in Victoria*, the following indexes apply for adjusting the costs for roads and intersections to 2019/20.

2016		2017				2018				2019	
FY 16/17		FY 17/18				FY 18/19					
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sep	Dec	Mar	June	Sep	Dec	Mar	June	Sep	Dec	Mar	June
104.2	103.9	104.4	105.9	109.0	109.6	113.7	117.1	119.0	121.0	120.6	120.7
				B= 109.6				A= 119.4			

Thus, for a \$4.0m Reference Year Standard Cost Estimate for an intersection, the Current Year Adjusted Cost Estimate for 2019/20 would be:

$$\text{CYACE} = \$4,000,000 \times 119.4/109.6 = \$4,357,664$$

Figure 2: Indexation of Benchmark Costs

This approach is intended to be consistent with the Ministerial Direction, which sets out the approach to use the ABS Producer Price Index relevant to the infrastructure category to adjust the Standard and Supplementary levies for each financial year.

7. Role of BIC

ICP Development

The *Infrastructure Contributions Plan Guidelines* set out the operational approach to developing the monetary component of Infrastructure Contributions Plans and must be read in conjunction with the Act and Direction.

Broadly, the key requirements are:

- Strategic Justification:** Identification and strategic justification for infrastructure to be included in the ICP is done through preparation of the relevant PSP. An ICP is a funding mechanism for infrastructure, it does not justify the infrastructure on its own.
- Allowable Items:** All infrastructure included in an ICP must be consistent with the relevant allowable items list in the Ministerial Direction. Any items not on the list must not be included in the ICP.
- Basic & Essential:** The PSP process should demonstrate that infrastructure included in an ICP is necessary to create a liveable, sustainable and affordable community (essential) and fit for purpose, but not result in any unnecessary costs or overly impact affordability (basic). This is usually done through the PSP.
- Apportionment:** Apportionment calculates what proportion of an infrastructure item should be funded by an ICP. In most cases it will be 100%, however in some cases the demand for new infrastructure is not wholly attributable to development in the ICP area and funding should be shared between the ICP and other sources such as an adjoining ICP.
- Supplementary:** For a supplementary levy to be included in an ICP requires the infrastructure to be listed as eligible in the Direction and that there is insufficient capacity within the standard levy to fund all or part of any supplementary allowable items.
- Costing:** For the identified infrastructure, estimates of cost are required to test whether potential supplementary levy items (if any) can be contained within the standard levy or whether a supplementary levy is justified.

Broadly, BIC is intended to assist in:

- Ensuring the scope of standard infrastructure is basic & essential
- Assessing overall whether a supplementary levy is justified
- Assessing the cost of standard and supplementary items, and the Supplementary ICP Levy should one be justified.

Basic and essential Infrastructure

It is expected that in most cases the infrastructure strategically justified through negotiations with relevant stakeholders and Council as part of the PSP process will broadly conform with the benchmark

infrastructure designs. However, agreeing to modifications to the scope to deal with particular local needs or conditions may be required, while special bespoke infrastructure may occasionally be justified.

The adoption of a non-benchmark scope requires a clear justification based on some atypical circumstance. Examples might include:

- a benchmark item with greater or reduced scope (e.g. a benchmark intersection with extra pavement area due to an extra right turn lane)
- a benchmark item with extra special works (e.g. benchmark intersection with additional services protection works)
- a non-benchmark design variation or a completely non-benchmark item (e.g. a non-benchmark grade-separated intersection).

Note that BIC includes contingencies (15 or 20% depending on the infrastructure type) in accordance with the Ministerial Direction. It is not appropriate to automatically seek agreement to a special scope just because of minor variations from the benchmark. The contingencies are available to cope with minor changes in scope that may only marginally affect the cost estimates and the BIC should be considered adequate in these circumstances. Significant deviations from the BIC, in terms of scope of works or cost, would require a higher level of justification by the proponent.

Where a scope is agreed to be non-benchmark, the proposed change needs to be clearly documented as background material for the ICP, either through adjustments to the benchmark Scope Diagrams (e.g. adding a left turn slip lane, earthworks adjusted for crossfall) or through annotation (e.g. “relocate gas main”, “synthetic turf”).

In some circumstances, new bespoke drawings for infrastructure may be required if the infrastructure is clearly non-benchmark. An obvious example is long-span bridges. This non-benchmark infrastructure is often likely to be a supplementary item. While bespoke designs may be considered for community and recreation infrastructure, the cap and the inability to seek a supplementary levy for community and recreation infrastructure may make this an unproductive effort.



In all cases the adjusted/new Scope Diagrams must be developed and socialised through the appropriate stakeholders and Council to obtain agreement before new or adjusted cost estimates are prepared.

Refining Costs

It is anticipated that BIC, within its benchmark form or through making use of the unit rates to adjust the benchmark cost estimates, will allow most estimates to be prepared consistently, quickly and at low cost.

As noted above, in some cases an adjusted or non-benchmark scope may be agreed, such that the benchmark cost estimate is no longer appropriate and requires adjustment or replacement. The basis for estimating in most cases will either be the benchmark cost estimate itself, with appropriate adjustments where required, or a new or adjusted estimate based on the benchmark rates. Occasionally, a new detailed scope and bespoke cost estimate will be required.

To assist in describing the options, the following definitions have been adopted:

Benchmark Item: The infrastructure item relies on the benchmark design and therefore the benchmark cost can be directly utilised without adjustment. Benchmark is considered ‘off the shelf’ or ‘usual practice’.

Hybrid Item: The design is based on or similar to the benchmark infrastructure, but some variations are required through either:

- benchmark rates can be used with adjusted quantities to account for minor scope differences (e.g. extra earthworks)
- additional line items are added for non-benchmark components (e.g. a major services relocation)
- a more significant design change but using benchmark materials, and benchmark unit rates can reasonably be applied to develop an estimate (e.g. a new intersection design)

Bespoke Item: The infrastructure item is significantly different from benchmark design and used non-benchmark materials or construction processes. The P90 unit rates can be used where available for costing line items, but bespoke items will typically may require bespoke design and cost estimate to be prepared (e.g. grade separation of a road).

More fulsome examples are provided in Appendix 6.

In all cases, the estimate should be documented based on the VPA’s standard costing template used for the benchmark cost estimates with additional breakdown or line items where required.

The level of extra costing effort should have regard to the purpose. For example, for a supplementary item a new or adjusted cost estimate should be prepared in some detail to allow stakeholders to understand the assumptions involved, and any changes from the benchmark scope and cost that may be required. Alternatively, for a straightforward test to see whether the standard levy will be sufficient to cover an additional supplementary item, it may be sufficient to test a reasonable percentage increase estimate in the first instance, and only if such a test is marginal to proceed to a more detailed assessment. Similarly, if a community centre with increased scope is strategically justified but developing a full bespoke / hybrid costing will make no difference to the capped community infrastructure levy, the effort to prepare a new design and estimate may not be of value.

In all cases the assumptions and the source of a cost estimate should be documented to support decision making and the exhibition process if a supplementary item is required. Examples are provided in Table 1.

ITEM	DESCRIPTION	SCOPE	Quantity	Rate	2018/19 Cost	Indexed to 2019/20	COST SOURCE	FUNDING	Comment
RD01	Arterial Road 1	Std Item 2	1,200m	\$3,500,000 / 800m	\$5,250,000	\$5,719,434	Std Item 2	Std	
RD02	Connector Road 2	Std Item 4	650m	\$3,793,000 / 800m	\$3,081,813	\$3,357,376	Std Item 4	Std	
IT01	Intersection Arterial Road 1/ Connector Road 2	Std Item 9	1	\$4,310,000	\$4,310,000	\$4,695,383	Std Item 9	Std	Prim Artl/Connector
IT02	Intersection Arterial Road 3/ Connector Road 2	Std Item 13	1	\$3,962,000	\$3,962,000	\$4,316,266	Std Item 13	Std	Sec Artl/Connector
REC01	Sports & Rec Facility (5 Ha)	Std Item 42 + Contamination removal	1	\$8,021,000 plus \$345,000 quoted remove/disposal cost	\$8,366,000	\$9,114,055	Std Item 42 + Estimate A34234	Std	Estimate provided by XYZ contractors
PAV01	Sports Pavilion (2 playing areas)	Std Item 40	1	\$1,656,000	\$1,656,000	\$1,804,073	Std Item 40	Std	
COM01	Level 1 Community Facility	Std Item 37	1	\$7,606,000	\$7,606,000	\$8,286,099	Std Item 37	Std	
TOTAL						\$37,292,686			
Preliminary Assessment for testing purposes									
RD01	Arterial Road 3	Std Item 1	400m	\$3,860,000 / 800m + 5% for extra e'works	\$2,026,500	\$2,207,702	Std Item 1 + allowance for extra e'works	Std	5% allowance for testing Std Levy Capacity
Detailed Assessment (if Supplementary Levy justified)									
RD02	Arterial Road 3	Std Item 1 adjusted to allow for extra e'works	1	\$2,066,000	\$2,066,000	\$2,250,734	Cost Sheet 3AV3	Std	E'works quantity est'd using InfraWorks, std e'works rates used
Supplementary Item									
BR01	Arterial Road 1 over wide Creek	Dwg V34349CD date 12/5/2019	1	\$7,435,230 N/A	\$7,435,230 N/A	\$7,435,230	Cost Sheet CD17A	Sup	Costed in \$2019/20, so no adjustment needed

Table 1: Example summary source documentation

Indexing Costs

As demonstrated in Table , any costings base on BIC will need to be indexed to the appropriate year based on the indexing method described above.

New bespoke costings will likely be prepared by cost consultants using then current rates and therefore will not need indexing.

Works in Kind

The scopes and cost estimates included in DCPs have often been used in the past as the basis for developing works in kind agreements between developers and council for the delivery of infrastructure, especially roads, intersections and sports reserves. The actual approach adopted in developing each works in kind agreement varies between councils.

Given the process to resolve the ICP scopes and costs outlined above, there is no reason that BIC, or the agreed adjusted scopes and costs cannot be used to develop ICP works in kind agreements in exactly the same way as DCP scopes and costs have been used in the past.

8. Feedback and Comments

The VPA is open to receiving feedback or comments on the basis or application of BIC at any time. Comments can be made via email to infrastructure@vpa.vic.gov.au.

9. Appendices

Appendix 1: Roads and Intersections

Appendix 2: Bridges and Culverts

Appendix 3: Community Infrastructure

Appendix 4: Sports Pavilions

Appendix 5: Sport and Recreation Facilities

Appendix 6: Application to Non-Benchmark Infrastructure